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CANADIAN METEORITES ★ A catalogue of meteorites found in Canada

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Matt Krys with one of the Bruderheim specimens, courtesy of Dr. R. E. Folinsbee, University of Alberta, Edmonton, Alberta

CANADIANA
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CANADIAN METEORITES

Published by THE PROVINCIAL MUSEUM OF ALBERTA
in conjunction with the exhibition:
"METEORITES"
February 7, 1984

Researched and written by Richard White
Designed by Anne Pope

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Alberta
CULTURE

INTRODUCTION

The fall or discovery of a meteorite seems to have always been an event of great significance to man. In ancient civilizations, the spectacular fireball accompanying most meteorite falls, along with the unusual appearance of the meteorite's surface, led to the belief that meteorites resulted from actions of the gods. Numerous mentions of meteorites exist in recorded ancient history, and most of them associate the fall with some momentous event such as the decisive turn of a battle. Meteorite cults, based on the worship of stones from the sky, even existed in some regions of the Mediterranean for several hundred years before and after the birth of Christ.

But their importance to the ancients was not all mystical. Beads, daggers and swords made from an apparently nickel-iron alloy have been unearthed in the Middle East, suggesting that iron meteorites may have been some of man's first "iron mines". In fact, the word for iron in some modern languages is related to ancient Sumerian and Egyptian words for "fire from heaven" and "metal from the sky".

In spite of their great historical significance, however, meteorites have only been fully accepted as extra-terrestrial by the scientific establishment since the start of the 19th Century. Scientists viewed the ancient accounts as being more myth than fact, tied as they were to the supernatural. In addition, it was hard to prove that meteorites originated outside the Earth; they came from the sky, obviously, but could they not have been earth rocks somehow projected into orbit? As more meteorites were studied, however, chemical evidence began to emerge which showed meteorites to be unlike earth rocks yet similar to one another. This was the beginning of the acceptance of their extra-terrestrial origin.

Meteorites continue to be significant and mysterious. Coming as they do from outside the Earth, they provide information about the geology of the solar system which could not possibly be obtained on Earth, and thus are invaluable to science. Yet many things about them remain uncertain. For one thing, their origin has not been conclusively proven, if indeed there is one single origin. In addition, there are curiosities about their patterns of fall: certain types of meteorites, for example, seem to fall in some locations more frequently than in others. Recently, a meteorite has been found which is generally accepted to have come from the moon, while there are others which are geologically similar to rock from the planet Mars, bringing into question long-standing theories about the origin of meteorites.

THE FALL OF A METEORITE

Before encountering the earth, a meteorite is technically a meteoroid - a fragment of rock in an elliptical orbit around the sun - travelling through space at about the same speed as the earth (30 km/sec.). When the orbital paths of the earth and the meteoroid chance to intersect, the meteoroid enters the earth's atmosphere and is rapidly slowed down due to friction with the air; great heat is generated by this friction and the meteoroid flares brightly and sometimes explodes. The flare itself, or "shooting star", is known as a meteor.

Provided the meteoroid does not burn up entirely, the rock (or fragments of it, if it exploded) falls to the surface of the earth, at this point having a speed no greater than any object falling to earth due to gravity. Enormous meteoroids can travel through the atmosphere without being slowed down, their great momentum overcoming the force of friction with the air, and strike the earth with such force as to cause an impact crater. Numerous craters on the earth's surface are believed to have been caused by collisions of this sort, but these occurrences are rare.

The fall of a meteorite is quite a spectacle. Observers have reported coloured flashes in the sky that turn night to daylight, multiple explosions, and unusual crackling and thundering sounds both before and after the sighting. Near the actual fall, the sound of fragments breaking off the stone has been heard, as has the whistling of the falling stone and the thud of impact. On rare occasions, meteorite falls have caused damage or injury, but none of the meteorites recorded in Canada have done so.

When a meteorite is discovered, whether as a result of a meteor being seen in the sky or simply by accident (in which case it is referred to as a find, rather than a fall), it usually creates quite a stir in the community. In the case of most Canadian meteorites, the finder has either reported the meteorite to the local museum or university, or announced it to the local press whose report was followed up by scientists who then obtained it for study. It is not uncommon, however, for meteorites to go unreported for years, the finder being either unaware of its celestial origin or more interested in its value as a living room curio than a scientific specimen. Iron meteorites make quite effective door-stops. □

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asked for it. I asked him wh
he mumbled something; I told him I co
hear and suggested he come down.

More BRIDGE Page A3

Brilliant flash a meteorite?

By BOB BEAL and DARCY HENTON

It was a huge, brilliant flash, all colors of the rainbow depending on which witness you talked to.

Skies over the Edmonton area lit up at about midnight as what is believed to have been a meteorite passed over the city. It may have been seen as far south as Calgary.

John Hault, director of the Queen Elizabeth Planetarium, said descriptions of the spectacle "fit with something we call a fireball, which is a fairly large meteor which has reached fairly close to the earth."

"The whole sky just went like a fluorescent green," said Journal photographer Dean Bicknell, who saw it from his Mill Woods home.

"It was a giant white flash," said Darren Bacon, who lives in northeast Edmonton. "Then there was a red line, kind of a red streak, kind of a huge smoke line."

"There was a huge ball of fire between two clouds," said Reg Yandt, of 15211 96th St.

"It was like a comet. You could see it break up," said Alex Wharrie in St. Albert.

More FLASH Page A2

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"Edmonton Journal", Edmonton, Alberta, Wednesday, June 2, 1982

□

Once in the hands of scientists, the meteorite is weighed, measured, chemically analysed, classified and named (the name coming from a nearby locality or physical feature). This information, along with the details of its recovery, are generally written up and published in scientific journals to alert the scientific community of the discovery. Following this original analysis, portions of the specimen may be removed and passed on to other institutions for additional study. As a result, fragments of one meteorite are often found in several collections around the world.

Over the years, meteorite finds have become more and more frequent. This is due most likely to an increasing awareness of their importance throughout an increasingly populated globe. As many as 50 meteorites a year now get reported, so a single occurrence is not nearly as newsworthy as it once was. Through the first half of this century, scientific journals contained long descriptions of the sighting and discovery of an individual meteorite, but the greater frequency has dulled the novelty somewhat.

In recent years, the world's meteorite count has more than doubled with the discovery of thousands of new meteorites on the Antarctic ice. These meteorites are not new falls; they appear to have fallen over hundreds of thousands of years and been preserved in the ice, then slowly carried with the ice currents to locations where the ice is eroded, leaving unusual concentrations of meteorites. Prior to the Antarctic discoveries, there were just over 2000 meteorites recorded in the world, but the Antarctic meteorites have more than doubled that. □

"Edmonton Journal", Edmonton, Alberta, Thursday, June 3, 1982

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Meteor

(Cont'd from Page A1)

The search would include officials from the National Research Council in Ottawa, geologists from the Universities of Saskatchewan and Alberta, and possibly interested amateurs.

The cameras were set up at various points in the province by University of Saskatchewan officials involved in a meteorite recovery project.

The light show Tuesday night was the topic of the day in Edmonton.

"I've never seen anything quite like this before and actually I've never even read about anything quite as bright as this," said amateur astronomer Russ Sampson, who saw it from near the Hotel Macdonald.

"It is a very, very rare occurrence. You can go through I don't know how many lifetimes and not see something like this."

The flaming meteor apparently entered the atmosphere in southern Alberta, near Medicine Hat, and was last sighted in the Athabasca region.

No credible reports of it landing have been received, said Mr. Dyer, but "people around here are phoning and saying it landed in their backyard."

The last meteorite recovery in Alberta was made In 1976 near Innisfree, 160 km east of Edmonton.

A huge meteorite was found near Bruderheim in 1960.

Fire

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CLASSIFICATION

Meteorites consist primarily of two basic components - stone and metal (a nickel-iron alloy). They are classified into three groups according to the relative amounts of each of the components - Iron, Stony-Iron, and Stony. The name iron is used to refer to the metal because it is more plentiful than nickel in the alloy.

IRON METEORITES

Iron meteorites, comprising about 33% of known meteorites, are almost entirely metal, with only traces of stony material. The nickel content in the alloy ranges most commonly from 4% to 12%, but can be over 20%. These meteorites are quite dense and heavy; when cut and polished, they have a metallic surface which may display a regular geometric pattern when etched with acid. Further categorization of iron meteorites is done by the crystalline structure revealed by the etching and the proportion of nickel in the metal alloy. The main classifications are:

HEXAHEDRITE -

having a 6-sided crystalline structure and a nickel content of 4-7%

OCTAHEDRITE -

having an 8-sided crystalline structure and a nickel content of 8-11%

NICKEL-RICH ATAXITE -

having an undiscernible crystalline structure and a nickel content greater than 12%

The octahedrites, representing 70% of iron meteorites, are further sub-divided by texture (fine, coarse octahedrite, etc.)

STONY METEORITES

Stony meteorites, about 60% of known meteorites, are primarily silicate minerals (stone), although they can contain as much as 25% metal. They are divided into two major groups according to the presence or absence of chondrules - small, generally round, pockets of minerals. The groups are named chondrites and achondrites.

CHONDRITES

Chondrites are classified according to the type of silicate mineral which makes up the stone; this in turn correlates with the proportion of metal. The most common chondrites are:

Enstatite (13-25% metal)
Olivine-bronzite (16-21% metal)
Olivine-hypersthene (less than 10% metal)
Olivine-pigeonite (trace of metal)
Carbonaceous (no metal, 10-20% water, 2-4% carbon)

Carbonaceous chondrites are of particular interest because they contain carbon compounds resembling those found in living matter on earth.

ACHONDRITES

Achondrites are considerably scarcer than chondrites, representing only about 6% of the stony meteorite group. They are broken down into two divisions according to the amount of calcium oxide present, and further classified, as are the chondrites, by the silicate in the stone. No achondrites have been found in Canada. An alternate naming system still in common use is given here in brackets:

Calcium-poor (CaO less than 3%)
- Enstatite (aubrites)
- Hypersthene (diogenites)
- Olivine (chassignites)
- Olivine-pigeonite (ureilites)

Calcium-rich (CaO more than 5%)
- Diopside-olivine (nakhlites)
- Augite (angrites)
- Pyroxene-plagioclase (eucrites and howardites)

STONY-IRON METEORITES

The stony-iron meteorites, as one might expect, contain significant amounts of both stone (silicate minerals) and metal. They are the least plentiful group, comprising 4% of all known specimens. Most are assigned to one of two classifications - pallasites and mesosiderites - but there are a few anomolous specimens for which some scientists have created additional classification. Only two stony-irons have fallen in Canada; both are pallasites.

PALLASITES -

These are a fairly distinctive class containing grains of the mineral olivine embedded in nickel-iron alloy.

MESOSIDERITES -

These are classified only by the fact that they contain equal amounts of metal and stone. The metal does not usually form a continuous matrix, as with pallasites, but other than that no consistent structural features have been observed. Only 25 have been found throughout the world.

UNCLASSIFIED METEORITES

About 3% of all known meteorites are unclassified. In most cases, this is due to a lack of confirmed information.

Fred Kryz with one of the Bruderheim specimens, courtesy of Dr. R. E. Folinsbee, University of Alberta, Edmonton, Alberta

CANADIAN METEORITES

Forty-six meteorites have been found and identified in Canada. Some have been unearthed accidentally, their falls unwitnessed and unrecorded, whereas others have been seen flaring through the atmosphere by thousands of people and recovered within hours. Only one has actually been seen as it struck the ground. This catalogue contains descriptions of each of these forty-six meteorites, along with whatever information is available on their find or fall.

Meteorites, perhaps more than anything else on earth, can not really be considered to belong to any one nation. When a meteorite falls, the sovereignity of the part of the globe which happened to be under it as it fell seems hardly significant when compared to the fact that something from outer space has fallen upon the earth. So, rather than a catalogue of Canadian meteorites, this is more correctly a catalogue of meteorites which have been found on what we now call Canada, keeping in mind that there are probably meteorites which have fallen but have not been found.

The National Meteorite Collection of Canada, part of the Geological Survey of Canada, Department of Energy, Mines and Resources, is the country's largest collection; it houses specimens from all but nine of these forty-six meteorites, in addition to specimens from hundreds of other meteorites recovered throughout the world. Active participation in the growth and use of the collection is encouraged. Enquiries should be directed to:

Curator
National Meteorite Collection of Canada
Geological Survey of Canada
601 Booth Street
Ottawa, Ontario, Canada
K1A OE8

Several Canadian universities also have substantial meteorite collections, usually specializing in falls in their region. □

WHERE HAVE METEORITES BEEN FOUND IN CANADA?

1. GAY GULCH
2. SKOOKUM
3. GREAT BEAR LAKE
4. HOLMAN ISLAND
5. REVELSTOKE
6. BEAVER CREEK
7. PEACE RIVER
8. MAYERTHORPE
9. ABEE
10. EDMONTON
11. BRUDERHEIM
12. VILNA
13. FERINTOSH
14. IRON CREEK
15. INNISFREE
16. KINSELLA
17. MILLARVILLE
18. VULCAN
19. BELLY RIVER
20. SKIFF
21. BLAINE LAKE
22. RED DEER HILL
23. SPRINGWATER
24. KINLEY
25. BRUNO
26. ANNAHEIM
27. CATHERWOOD
28. WYNYARD
29. GARDEN HEAD
30. FILLMORE
31. RIVERTON
32. HOMEWOOD
33. GIROUX
34. OSSEO
35. MANITOUWABING
36. MIDLAND
37. SHELBURNE
38. DRESDEN
39. DE CEWSVILLE
40. WELLAND
41. MADOC
42. THURLOW
43. BLITHFIELD
44. CHAMBORD
45. LEEDS
46. BENTON

The Globe and Mail", Toronto, Ontario, Wednesday, July 12, 1939.

nd Mail

Forecast:
Fair; Warmer

2, 1939. 3 Cents Per Copy 24 PAGES

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Huge Meteor Blazes Across Ontario Sky; '30 Miles From Earth'

Fiery Ball Startles Wide Area; Seen by One Toronto Man

BLASTS HEARD

(Map on Page 2)

A huge meteor blazed a flaming trail across Western Ontario last night, lighting up the skies for many miles with its dazzling brilliance, and leaving in its wake a garbled maze of speculation over seven counties. Meteorologists in the north central States, which also observed the phenomenon, estimated that the fiery ball passed within thirty miles of the earth's surface.

Paul Annear, observatory assistant at the Case School of Applied Science, in Cleveland, said his observations led him to believe the meteor had been quite close.

"It seemed as bright as a full moon," he stated, "and was certainly very close to the earth. I

British Officials Impressed By Children's Haven 'Gesture'

Spirit Behind Suggestion to Move Youngsters to Canada Greatly Appreciated, Ministry's Message

(Picture on Page 5)

(Special Cable to The Globe and Mail.)

(Copyright.)

London, July 11 — The imagination of wealthy cold-blooded officialdom, as well as that of the English public, has been fired by The Globe and Mail's suggestion in a leading editorial that the Mother Country send her children and the young Princesses of the Royal family to Canada in event of war emergency.

No newspaper editorial in recent years has aroused such keen interest among the public and

rest that any grave decision such as sending children overseas as a safety measure would rest on the Government authorities, since the problem of evacuation would be directly controlled by the Government in any state of emergency.

Hard-pressed Ministry of Health officials, now in charge of evacuation plans, are so favorably impressed with the Canadian interest in their problem, that they have sent The Globe and Mail the following message, which indicates that they believe the scheme might have distinct possibilities:

"...pressed transfer of English

ALPHABETICAL LIST OF CANADIAN METEORITES

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★ ABEE

LOCATION OF FIND:
A wheat field near Abee, Alberta

DATE:
Fell - June 9, 1952, 11:05 am

DESCRIPTION:
A large irregular block - 30.5 x 40.6 x 47.0 cm - weighing 107 kg

CLASSIFICATION:
Stone. Enstatite chondrite

CIRCUMSTANCES:

The meteorite was found in a hole about 75 cm in diameter, almost 2 metres deep, inclined at 65 degrees to the horizontal. It was purchased from the finder by the Geological Survey of Canada.

CURRENT HOUSING:
The main mass is in the Canadian Meteorite Collection.

★ ANNAHEIM

LOCATION OF FIND:
10 km north of Annaheim, Saskatchewan

DATE:
Fell - January 21, 1914 (?)
Found - July 30, 1916

DESCRIPTION:
A roughly crescent shape, 30 cm long and 15 cm through at the thickest point, weighing 11.84 kg

CLASSIFICATION:
Iron. Medium octahedrite

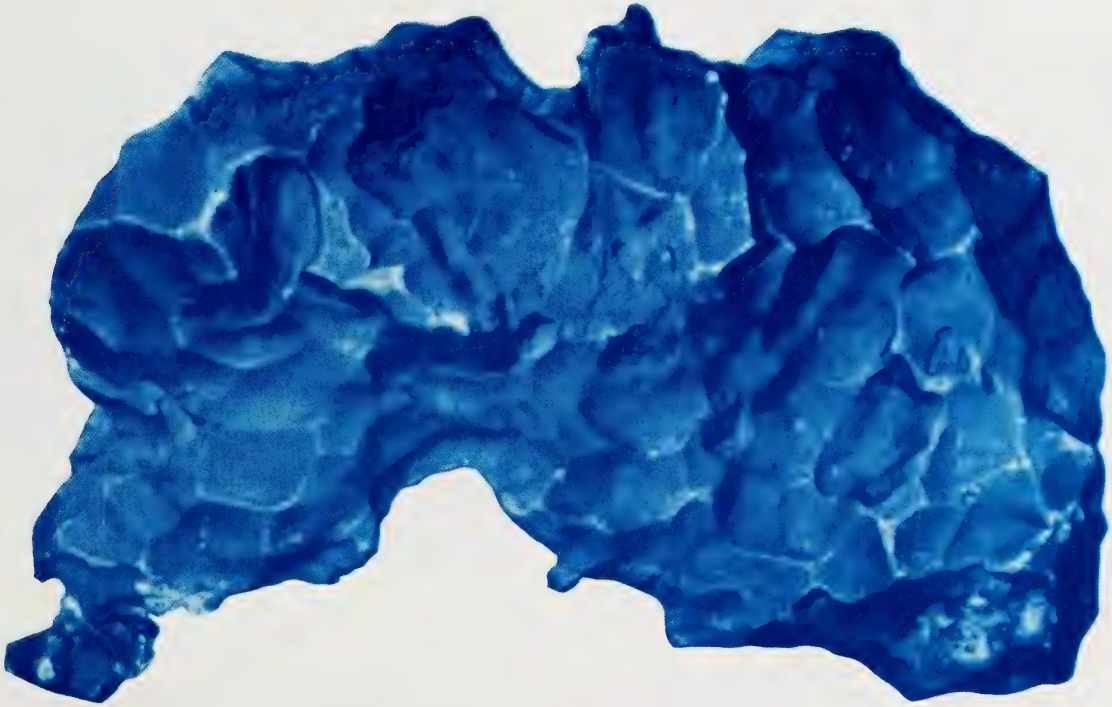
CIRCUMSTANCES:

The meteorite was discovered by Mr. William Huiras while he was mowing hay on his farm, 10 km north of Annaheim. He chiselled off a piece and sent it to the Chief Game Guardian in Regina who, in turn, sent it to the Department of Mines for examination. The latter concluded it to be meteoritic and purchased it from Mr. Huiras.

The specimen was not heavily weathered, and, as such, appeared to be a recent fall, so researchers enquired in the area for any information on recent meteor sightings. They learned that a spectacular

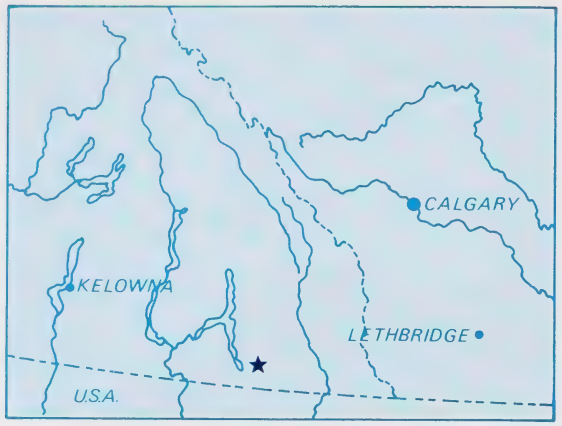
fireball had been seen two years previous; it was assumed, but never proven, that this was the fall of the Annaheim meteorite.

CURRENT HOUSING:
The main mass is in the Canadian Meteorite Collection.



R. A. A. Johnston, and H. V. Ellsworth, "The Annaheim Meteorite", Transactions of the Royal Society of Canada, Section IV, 1921, p. 92, plate IV

★ BEAVER CREEK



LOCATION OF FIND:
The bank of Beaver Creek, West Kootenay District, British Columbia, about 16 km upstream of where the creek enters the Columbia River

DATE:
Fell - May 26, 1893, between 3 and 4 pm

DESCRIPTION:
The main stone was estimated to be about 16 x 18 x 24 cm with a weight of 12 kg (portions had been removed prior to exact measurement). A smaller stone weighing about 2.3 kg was also recovered.

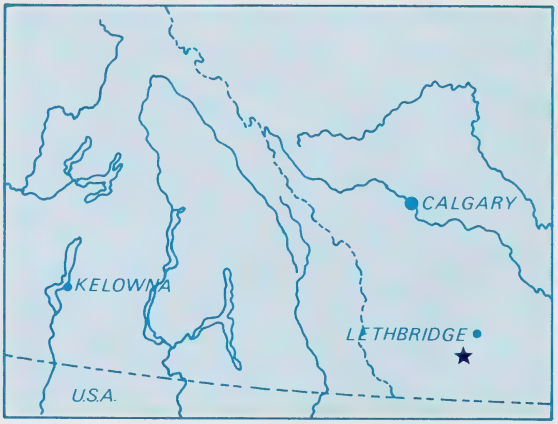
CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:
The fall was observed, and the two specimens found and dug up, by Mr. James Hislop, a civil engineer who was in the area at the time. He brought the large stone to Washington and sold it to scientists there on July 6, 1893.

The main stone was recovered from a hole about a metre deep (65 cm of soil and 35 cm of hardpan) inclined at 58 degrees to the horizontal. Earth was scattered as much as 3 metres around the hole. People within 40 km of the find reported hearing and seeing the fall; some suggested that additional, larger stones had fallen but none were ever found.

CURRENT HOUSING:
The meteorite has been distributed. Two small fragments are in the Canadian Meteorite Collection.

★ BELLY RIVER



LOCATION OF FIND:
The east side of the Belly River, about 44 km southeast of Lethbridge, Alberta

DATE:
Found - winter, 1943-44

DESCRIPTION:
One complete reddish-brown stone of 7.9 kg

CLASSIFICATION:
Stone. Olivine bronzite chondrite

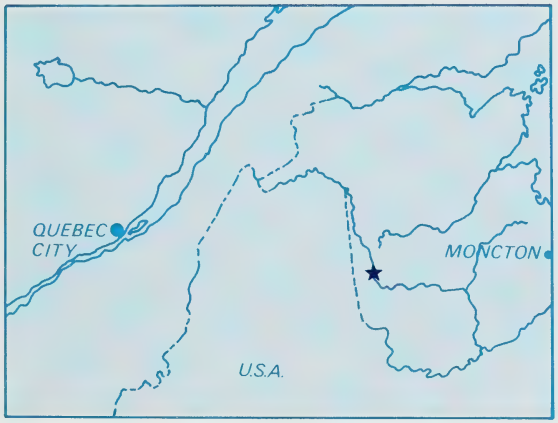
CIRCUMSTANCES:
The meteorite was discovered by Mr. Boyd Wettlaufer after the aircraft on which he was Chief Photographic

Officer had force landed and he had set out to scout the area around the landing site. In the summer of 1949 Mr. Wettlaufer supervised a search for additional stones in the area but none were ever found.

This meteorite was of particular interest to scientists because it contained an unusual system of metallic veins.

CURRENT HOUSING:
The meteorite has been distributed. Three specimens are in the Canadian Meteorite Collection.

★ BENTON



LOCATION OF FIND:
Benton, New Brunswick

DATE:
Fell - January 16, 1949, about 4:00 pm

DESCRIPTION:
Two stones - 1.5 kg and 1.34 kg

CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:
The fall was reportedly preceeded by several minutes of a thunder-like sound, while a long trail of smoke lingered for some time after the fall.

One of the stones fell on the property of a Benton resident who corresponded with several scientific institutions in an attempt to sell his meteorite to the highest bidder. He claimed in the course of his negotiating to have been offered $1,800.00 but no record exists of the final selling price.

CURRENT HOUSING:
The larger stone has been distributed; most of the smaller stone is in the Canadian Meteorite Collection.

★ BLAINE LAKE

LOCATION OF FIND:
7 km southwest of Blaine Lake, Saskatchewan

DATE:
Found - summer 1974

DESCRIPTION:
One stone of 1896.4 g

CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:
The meteorite was found by Mr. N. W. Perverseff and sent to the University of Saskatchewan where it was identified. It is sufficiently similar to the RED DEER HILL meteorite to raise the possibility of their being from the same fall.

CURRENT HOUSING:
The meteorite is in the Canadian Meteorite Collection in several fragments.

★ BLITHFIELD

LOCATION OF FIND:
Blithfield Township, Ontario

DATE:
Found - August 13, 1910

DESCRIPTION:
About 8 x 10 x 13.5 cm, weighing 1.83 kg

CLASSIFICATION:
Stone. Enstatite chondrite

CIRCUMSTANCES:
The original finder, Mr. Joseph Legree, thought that he might have found some silver ore. He broke the meteorite into fragments and sent a few pieces to an assayer to determine the silver content. The results were negative.

CURRENT HOUSING:
The main mass, and three smaller fragments, are in the Canadian Meteorite Collection.

★ BRUDERHEIM

LOCATION OF FIND:
Over an area of several square kilometres just north of Bruderheim, Alberta

DATE:
Fell - March 4, 1960, 1:06 am

DESCRIPTION:
303 kg of stones, ranging in size from 31 kg to 5 mg

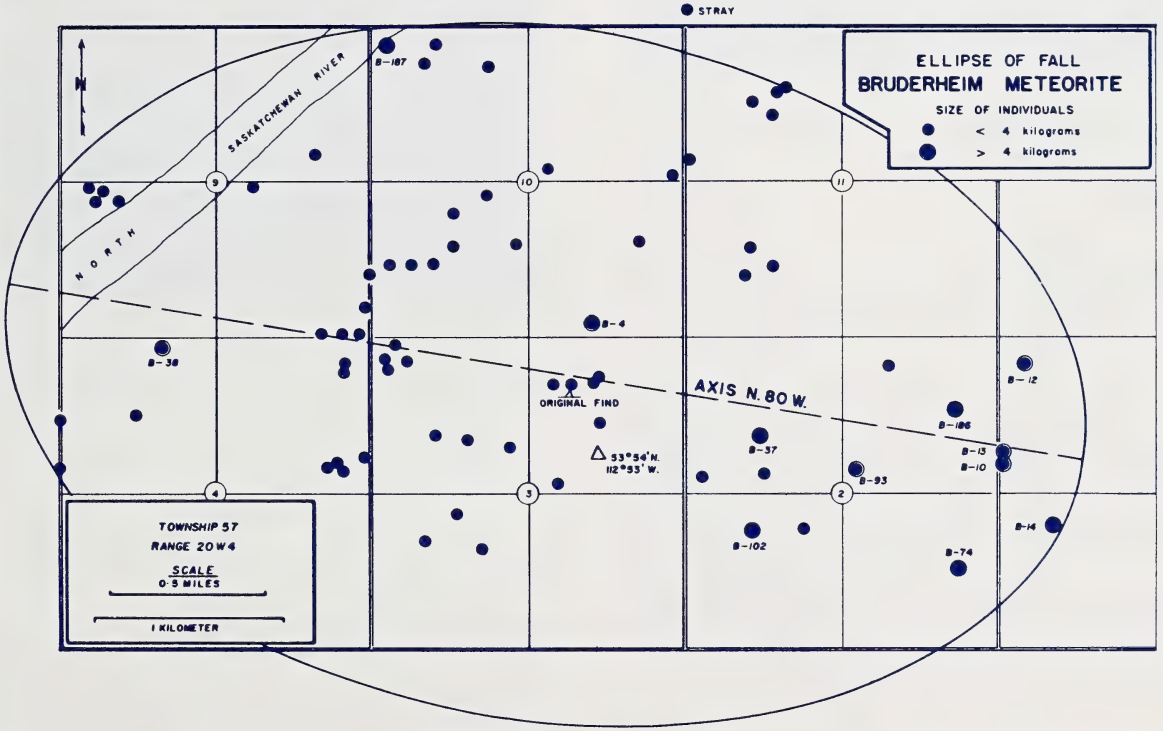
CLASSIFICATION:
Stone. Olivine hypersthene chondrite

CIRCUMSTANCES:

A brilliant fireball was observed by many people in the area, while the accompanying explosion was heard almost 100 km in all directions. The stones appeared to have fallen vertically, bounced off the frozen ground under the snow, and come to rest back up on the surface of the snow. Nearly 700 fragments were reported found.

CURRENT HOUSING:

Specimens are widely distributed. The largest single stone (30.7 kg) is in the Canadian Meteorite Collection, but the largest total mass is at the University of Alberta in Edmonton.



(Courtesy of Dr. R. E. Folinsbee)

★ BRUNO

LOCATION OF FIND:
Near Bruno, Saskatchewan

DATE:
Found - summer, 1931

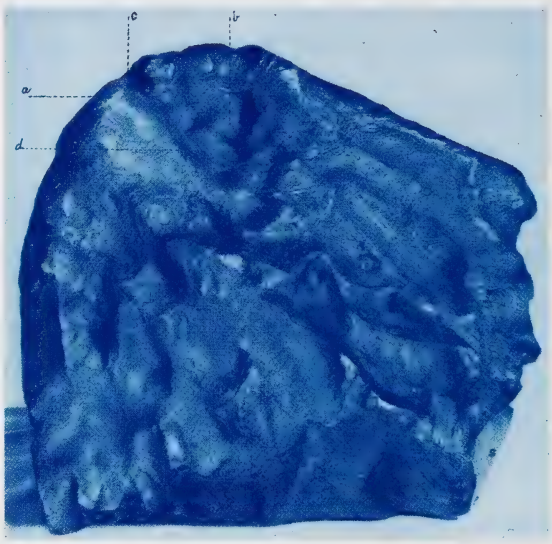
DESCRIPTION:
One single mass of 13 kg

CLASSIFICATION:
Iron. Hexahedrite

CIRCUMSTANCES:
The meteorite was found by Mr. A. D. Ebner of Bruno, Saskatchewan while he was hauling rocks from his field. It had attracted his attention because of its weight. The Ninninger Meteorite Laboratory in the United States had sent out descriptions of meteorites in an attempt to alert people to the possibility of meteorite finds on their land. Mr. Ebner thought the rock matched the description and sent off a chip directly to the Ninninger Laboratory for analysis.

The Bruno meteorite proved to be highly significant for its surface markings and form.

CURRENT HOUSING:
One small slice (93.3 g) is in the Canadian Meteorite Collection. The main mass is at Arizona State University.



H. H. Nininger, "The Bruno Meteorite", American Journal of Science, Fifth Series, Vol. XXXI, No. 183, March, 1936, p. 211, Fig. 1

★ CATHERWOOD

LOCATION OF FIND:
Near Catherwood, Saskatchewan

DATE:
Found - 1965

DESCRIPTION:
One stone of 3.92 kg

CLASSIFICATION:
Stone. Olivine hypersthene chondrite

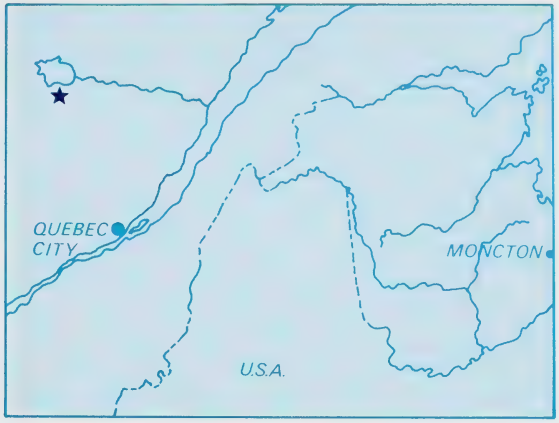
CIRCUMSTANCES:
The meteorite was found by Mr. Cecil Ross when it became entangled in a rod weeder. Mr. Ross gave it to a rock collector who had it analyzed at the Headquarters of the Meteorite Research and Recovery Project in Saskatoon, Saskatchewan. It was later sold to that Project.

Three years later, the KINLEY meteorite was found within a few kilometres. It too is an olivine hypersthene chondrite, but sufficiently different to be considered not part of the CATHERWOOD.

CURRENT HOUSING:
The main mass is in the Canadian Meteorite Collection.

□

★ CHAMBORD



LOCATION OF FIND:
A field about 4 km from the Village of Chambord, Quebec

DATE:
Found-1904

DESCRIPTION:
An irregularly shaped block about 19 x 9 x 15 cm, weighing about 6.6 kg

CLASSIFICATION:
Iron. Medium octahedrite

CIRCUMSTANCES:
When the meteorite was found, it was brought to the attention of the Superintendent of Mines for the Province of Quebec who then loaned it to the Geological Survey Department for analysis.

CURRENT HOUSING:
The entire mass is in the Canadian Meteorite Collection.

□ □

★ DE CEWSVILLE

LOCATION OF FIND:
A ditch on the side of Talbot Road in the village of De Cewsville, near present-day Cayuga, Ontario

DATE:
Fell - January 1887, 2 pm
Found - February 16, 1887

DESCRIPTION:
One stone, 6 cm in diameter, weighing 340 g

CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:
The following report was made by Professor E. E. Howell in 1890:

"The ditch at the time contained about a foot of water from a recent thaw, which was covered with thin ice. The meteorite made a hole in this ice about a foot in diameter. The whizzing noise in the air and the splash in the water were heard, and the latter was seen by a Mrs. Leonard Strohm, who was walking along the middle of the street and was only about 15 feet distant. Her first thought was that someone had thrown a snowball."

Edwin E. Howell, "Description of New Meteorites", Rochester Academy of Science, Vol. 1, June 23, 1890

CURRENT HOUSING:
The entire stone is in the Vienna Museum, Vienna, Austria.

★ DRESDEN

LOCATION OF FIND:
A field near Dresden, Ontario

DATE:
Fell - July 11, 1939, 8:56 pm
Found - July 12, 1939

DESCRIPTION:
The main mass was described at the time as being "about the size of a field watermelon 14 inches long and 9 inches in diameter". It weighed about 40 kg.

CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:

The meteor was first observed over the Bruce Peninsula where it exploded and sent a fragment into Georgian Bay, narrowly missing a yacht. A second explosion was reported over the town of Listowel; a fragment from this apparently fell just off shore in Lake Huron. Five further explosions were reported, the last of which scattered numerous small fragments and projected the main mass into Dan Solomon's beet field near Dresden. Mrs. Solomon saw the impact.

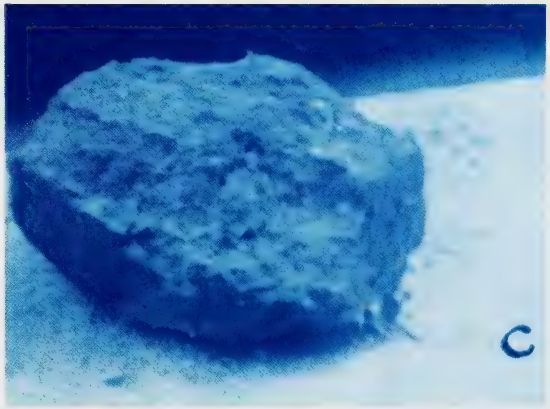
The meteorite was found the next morning in an almost vertical hole 1.5 metres deep. Mr. Solomon dug it out and sold it for four dollars to Mr. Charles Ross, the editor of the Dresden News. Mr. Ross put it on display in the window of his newspaper office and sold it the next day to an individual from Chatham.

CURRENT HOUSING:

One of the smaller complete fragments is in the Canadian Meteorite Collection. The location of the main mass is not recorded.

DRESDEN METEORITE

a. Mr. Soloman excavating the meteorite
b. The meteorite immediately after recovery
c. The main mass before washing



W. G. Colgrove, "The Dresden Meteorite", Journal of Royal Astronomical Society of Canada, Vol. XXXII, 1938 p. 300, plate XII

"The Globe and Mail", Toronto, Ontario, Thursday, July 13, 1939.

Metropolitan Edition

VOL. XCVI. NUMBER 27,946.

$4 Buys Meteorite Which Fell in Kent; Value Put at $200

88-Pound Mass of Sky Rock Sold by Farmer Who Is Glad to Get Rid of It; Landed in His Beet Field and Scared Wife Nearly to Death

FIND EXCITES TORONTO ASTRONOMER

An 88-pound meteorite, quoted at around $200 by Toronto astronomers yesterday was sold in a pickle dicker between a Kent County dairy farmer and an oil prospector for the round sum of $4. The rock, largest piece yet found of the huge meteor which Tuesday night blazed over the Western Ontario counties, was found on the farm of Dan Solomon, a negro, near Dresden.

The transaction, which occurred in the presence of a number of interested spectators in Dan Solomon's beet field, near Dresden, some eighteen miles north of Chatham, served, by bringing the visitation down to a commercial basis, to [illegible] many of the fears raised at the height of the meteor invasion. At the same time it gave to Dr. A. Chant, Director Emeritus of the David Dunlap Observatory, Richmond Hill, a piece of meteor in good condition, and the size described was worth any day on the open market upward of $200.

In the meantime, other bits of meteor, ranging from one to three pounds, are going for a song. Late information had it that Bruce Cumings, A. B. Scott, George Hightgate, and Henry Lozen, all farmers living within a mile area of the Solomon farm, were awaiting offers.

The Cumings meteorite also landed in a beet field and bucked off two beets before it slewed to a halt a few inches under the surface. The Lozen meteorite, with a four foot [illegible] differs [illegible] three pounds [illegible] a pasture field.

Professor Excited

Professor Chant, with the [illegible] conservatism of [illegible] excited [illegible] concerning [illegible] the same

TYROL EDICT ATTRIBUTED TO SPY FEAR

Recall of Grandi From London Post Linked With Move

SHIFT UNDERWAY

(By HERBERT L. MATTHEWS
(Wireless to The New York Times and The Globe and Mail.)
(Copyright.)

Rome, July 12. A new and [illegible] news has been introduced into [illegible] explosion of foreigners from [illegible] Tyrol with an official communique [illegible] that France stated that the [illegible] was taken by the Axis [illegible] Paris for which reason it [illegible] clear that questions of exp[illegible] play a part in the complicat[illegible] lives for the edict. Here is t[illegible] of the communique:

"For reasons of [illegible] vital a[illegible] vary chain [illegible] based on [illegible] from the Axis countries [illegible] ties of some elements belo[illegible] the Western powers reside[illegible] the Western Provinces of the Ministe[illegible] Party [illegible] Province [illegible] Tyrol [illegible] [illegible] measures.

"The armed [illegible] evacuate [illegible] the frontier [illegible] on the oth[illegible] three [illegible] of the K[illegible] and [illegible] Kufstein temporal[illegible] Bolzano Provin[illegible] [illegible] Italians [illegible] [illegible] a longer [illegible]

EDMONTON

LOCATION OF FIND:
13 km northeast of Edmonton, Alberta

DATE:
Recognized - 1939

DESCRIPTION:
One mass of 17.34 kg

CLASSIFICATION:
Iron. Hexahedrite

CIRCUMSTANCES:
Details concerning the discovery of this meteorite are not on record. It was apparently plowed up on a farm in the early 1930's and kept as a curio until 1939 when it was brought to the University of Alberta in Edmonton.

CURRENT HOUSING:
The entire mass is at the University of Alberta in Edmonton

FERINTOSH

LOCATION OF FIND:
Near Ferintosh, Alberta

DATE:
Found - October, 1965

DESCRIPTION:
One stone of 2.2 kg

CLASSIFICATION:
Stone. Unclassified chondrite

CIRCUMSTANCES:
The stone was found by Mr. I. S. Enarson while harvesting. It may have come from a bright meteor seen in the area in the 1930's.

CURRENT HOUSING:
The main mass is at the University of Alberta in Edmonton.

Subject: *A meteorite or fireball streaking across western Canada lighting up the night skies like day, later a sonic boom.*

Event: *Night changing rapidly to full day light. Something coming fast from the East above the clouds. Then about due South, across an opening in the clouds, the meteorite came into view and disappeared to a shadow behind the clouds. Then darkness.*

A flashback by Mr. Harold Jewell, Mirror, Alberta

At about 8:40 p.m., M.S.T., on March 18, 1934, a detonating fireball of most unusual magnitude was observed over a large area in western Canada. Reports of this meteor have been received from an area bounded by Prince Albert and Regina, Saskatchewan, on the east and Helena, Montana, Nelson, British Columbia, and Edmonton, Alberta, on the west. The direction of the flight seems to have been from the east to the west over the central portions of the provinces of Saskatchewan and Alberta, the meteor exploding with a loud detonation over the region near Buffalo Lake, south of Camrose, Alberta. The detonation was heard over a large area in towns separated by as great a distance as 150 miles. Estimates of the brightness of the meteor range all the way from that of a crescent moon to a radiance almost equal to the sun. This is the type of meteor from which meteorites might quite possibly be recovered, and one unconfirmed report of the finding of a meteorite has already appeared, but it is too early yet to give any definite information on this point.

"The Alberta Fireball of March 18, 1934", as reported in the R.A.S.C. Journal, Vol. XXVIII, No. 4, No. 233, April 1934

★ FILLMORE

LOCATION OF FIND:
Near Fillmore, Saskatchewan

DATE:
Found - about 1916
Recognized - 1968

DESCRIPTION:
A small single specimen of 113 g

CLASSIFICATION:
Iron. Octahedrite

CIRCUMSTANCES:
No details are known concerning the discovery of this meteorite. It had been in the possession of a school teacher in Fillmore for some time before it was brought to the attention of Dr. W. F. Slawson at the University of British Columbia.

CURRENT HOUSING:
Two small specimens (3.0 g and 9.8 g) are in the Canadian Meteorite Collection. The location of the rest is not recorded.

★ GARDEN HEAD

LOCATION OF FIND:
Near Garden Head, Saskatchewan

DATES:
Found - early autumn, 1944
Recognized - 1964

DESCRIPTION:
A single mass of 1.296 kg

CLASSIFICATION:
Iron. Nickel-rich ataxite

CIRCUMSTANCES
The meteorite was found by Mr. G. J. A. Reberger of Shaunavon, Saskatchewan, while harvesting his wheat field. He sold it to the Geological Survey of Canada in 1964.

CURRENT HOUSING:
The entire meteorite, in several pieces, is in the Canadian Meteorite Collection.

□ □

★ GAY GULCH

LOCATION OF FIND:
A sluice box in Gay Gulch, near Dawson City, Yukon Territory

DATE:
Found - 1901

DESCRIPTION:
The meteorite was well-weathered and coated with a thin scaly rust when it was discovered. It weighed 483 g.

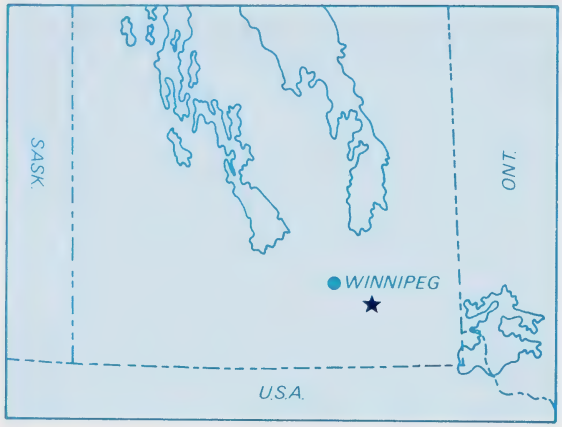
CLASSIFICATION:
Iron. Nickel-rich ataxite

CIRCUMSTANCES:
The meteorite was brought up from well below the surface with gravel that was being washed for gold. The gravel deposit in which it was found was estimated by geologists to date back to Pliocene times (2 to 5 million years ago), so the meteorite's fall could be just as old.

The SKOOKUM meteorite, found 16 km to the north a few years later, is chemically almost identical and thought to be part of the same meteorite. Some references combine them under the name 'Klondike'.

CURRENT HOUSING:
The main mass is in the Canadian Meteorite Collection.

★ GIROUX



LOCATION OF FIND:
5 km northeast of Giroux, Manitoba

DATE:
Found - 1954

DESCRIPTION:
One mass weighing 4.275 kg

CLASSIFICATION:
Stony-Iron. Pallasite

CIRCUMSTANCES:
The meteorite was found by Francis Langill in the winter of 1954-55 and reported in 1960.

CURRENT HOUSING:
Unrecorded.

★ GREAT BEAR LAKE

LOCATION OF FIND:
The surface ice of Great Bear Lake, N.W.T.

DATE:
Found - June, 1936

DESCRIPTION:
No records exist describing the original mass.

CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:
The main mass has been lost.

CURRENT HOUSING:
The only specimen on record (13.5 g) is in the United States National Museum in Washington.

HOLMAN ISLAND

LOCATION OF FIND:
Offshore of Holman Island, Victoria Island, N.W.T.

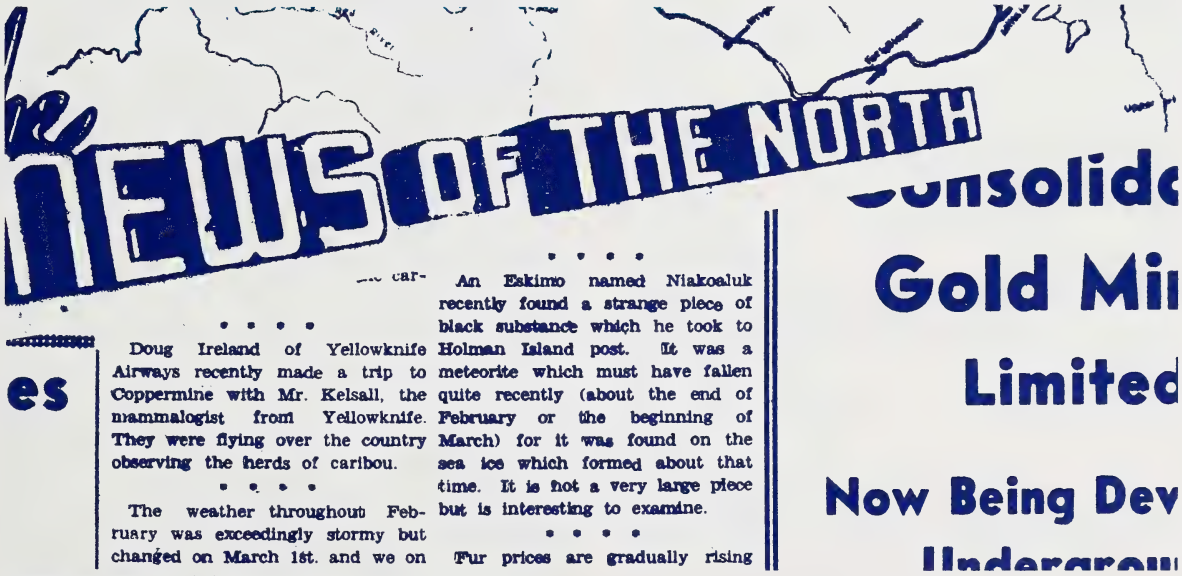
DATE:
Found - March 1951

DESCRIPTION:
One small stone of 552 g

CLASSIFICATION:
Stone. Olivine hypersthene chondrite

CIRCUMSTANCES:
The meteorite was brought to the Holman Island post by an Eskimo who had found it on the sea ice. Based on the age of the ice upon which it was found, it was assumed to be from a recent fall.

CURRENT HOUSING:
Three specimens are in the Canadian Meteorite Collection.



NEWS OF THE NORTH

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Doug Ireland of Yellowknife Airways recently made a trip to Coppermine with Mr. Kelsall, the mammalogist from Yellowknife. They were flying over the country observing the herds of caribou.

• • • •

The weather throughout February was exceedingly stormy but changed on March 1st. and we on

• • • •

An Eskimo named Niakoaluk recently found a strange piece of black substance which he took to Holman Island post. It was a meteorite which must have fallen quite recently (about the end of February or the beginning of March) for it was found on the sea ice which formed about that time. It is not a very large piece but is interesting to examine.

• • • •

Fur prices are gradually rising

"News of the North", Yellowknife, Northwest Territories, Friday, April 6, 1951

HOMEWOOD

LOCATION OF FIND:
4 km east of Homewood, Manitoba

DATE:
Found - summer, 1970

DESCRIPTION:
One slightly weathered specimen of 325 g

CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:
Mr. Roger Froebe, a student working in the farm of Mr. R. Bates, picked up the meteorite and brought a sample of it to the University of Manitoba where it was identified.

CURRENT HOUSING:
Unrecorded

INNISFREE

LOCATION OF FIND:
13 km north of Innisfree, Alberta

DATE:
Fell - February 5, 1977, 7:17 pm
Found - February 16, 1977 (first stone)

DESCRIPTION:
Six stones ranging from 0.033 kg to 2.07 kg with a total mass of 3.79 kg

CLASSIFICATION:
Stone. Hypersthene chondrite

CIRCUMSTANCES:
This meteorite was widely witnessed as it fell. One sighting came from 304 km away. As was the case with the VILNA meteorite which fell in the same area 10 years previous, almost to the hour, data from the numerous sightings were augmented by sky photographs taken from several observatories in the region and a predicted area of fall was calculated.

Scientists, led by Dr. Ian Halliday of the National Research Council, went on a field search for the meteorite February 16 and found it in 4 hours, only 300 metres from the centre of the predicted area. It

had fallen through the snow cover to the frozen ground and bounced back up on top of the snow where it was readily visible. This stone proved to be the largest. The other stones were found during follow-up searches after the snow had melted.

The details obtained from the multiple photographs of this meteorite as it fell allowed scientists to accurately plot the path of the orbit which the meteorite had followed before encountering the earth. This was only the third meteorite in the world for which tracking was accurate enough to allow such a calculation.

CURRENT HOUSING:

The meteorite has been distributed. The University of Alberta in Edmonton and the Canadian Meteorite Collection both have specimens.

It was approximately 7:15 p.m., February 5, 1977, and I was standing outside of the farmhouse, near the woodbox. Our farm is 2 miles east and 1.5 miles north of Chipman, Alberta. I was looking north and I saw what appeared to be car lights shining off our gas tank, and when I looked up the whole east sky was lit up. There was a large spark and about six little ones trailing. They were heading east. They were all pure white and very bright. The large one was about the size of a large car and the rest were only small, about the size of basketballs. They were all in a straight line, going east and appeared to be only about 50 feet over the top of the trees. I don't have any idea how fast they were going. I saw them for at least 30 seconds and they were still moving when I got to the house. The sparks appeared to be falling pretty rapidly and were something like a plane landing. The sparks appeared to be travelling about 40 miles per hour.

Miss Brendalee Walker, quoted in "The Innisfree Meteorite and The Canadian Camera Network", Ian Halliday, Alan T. Blackwell and Arthur A. Griffin, Journal of the Royal Astronomical Society of Canada, Vol. 72, No. I, 1978.

★ IRON CREEK

LOCATION OF FIND:

A hill near Iron Creek, a tributary of the Battle River, in the area of present-day Sedgewick, Alberta

DATE:

First reported in 1870

DESCRIPTION:

An irregular squat cone about 22 cm high, 56 cm in diameter, weighing 175 kg

CLASSIFICATION:

Iron. Medium octahedrite

CIRCUMSTANCES:

When the meteorite was first reported, it was in the farmyard of the mission house at Fort Victoria, some 100 km northeast of what was then Fort Edmonton. It had been taken there from Iron Creek, about 250 km to the south.

For countless generations, this iron meteorite had been greatly venerated by the native people. They saw the features of a face in the markings of its surface, and they made it offerings of beads and knives before setting out on hunts. When it was removed, they feared dire consequences which, as

the accompanying report relates, did come to be.

CURRENT HOUSING:
The entire meteorite is at the Provincial Museum of Alberta, Edmonton.

In the farmyard of the mission-house there lay a curious block of metal of immense weight; it was rugged, deeply indented, and polished on the outer edges of the indentations by the wear and friction of many years. Its history was a curious one. Longer than any man could say, it had laid on the summit of a hill far out in the southern prairies. It had been a medicine-stone of surpassing virtue among the Indians over a vast territory. No tribe or portion of a tribe would pass in the vicinity without paying a visit to this great medicine: it was said to be increasing yearly in weight. Old men remembered having heard old men say that they had once lifted it easily from the ground. Now, no single man could carry it. And it was no wonder that this metallic stone should be a Manito-stone and an object of intense veneration to the Indian; it had come down from heaven; it did not belong to the earth, but had descended out of the sky; it was, in fact, an aerolite. Not very long before my visit this curious stone had been removed from the hill upon which it had so long rested and brought to the Mission of Victoria by some person from that place. When the Indians found that it had been taken away, they were loud in the expression of their regret. The old medicine-men declared that its removal would lead to great misfortunes, and that war, disease, and dearth of buffalo would afflict the tribes of the Saskatchewan. This was not a prophecy made after the occurrence of the plague of smallpox, for in a magazine published by the Wesleyan Society in Canada there appears a letter from the missionary, setting forth the predictions of the medicine-men a year prior to my visit. The letter concludes with an expression of thanks that their evil prognostications had not been attended with success. But a few months later brought all the three evils upon the Indians; and never, probably, since the first trader had reached the country had so many afflictions of war, famine, and plague fallen upon the Crees and the Blackfeet as during the year which succeeded the useless removal of their Manito-stone from the lone hill-top upon which the skies had cast it.

1872: Butler. "The Great Lone Land", London, 1872, p.304.

★ KINLEY

LOCATION OF FIND:
Near Kinley, Saskatchewan

DATE:
Found - 1965 or 1966
Recognized - 1968

DESCRIPTION:
A well-weathered stone of about 2 kg

CLASSIFICATION:
Stone. Olivine hypersthene chondrite

CIRCUMSTANCES:
The meteorite was plowed up in either the fall of 1965 or the spring of 1966 and placed on a rock pile. It

was not recognized as meteoritic until 1968 when it was examined by a representative of the American Meteorite Laboratory in Denver, Colorado.

Three years earlier, the CATHERWOOD meteorite was found within a few kilometres. It is a similar chondrite but sufficiently different to be considered not part of KINLEY.

CURRENT HOUSING:
The Canadian Meteorite Collection holds three specimens.

★ KINSELLA

LOCATION OF FIND:
About 20 km north of Kinsella, Alberta

DATE:
Found - May, 1946

DESCRIPTION:
A single mass of 3.72 kg

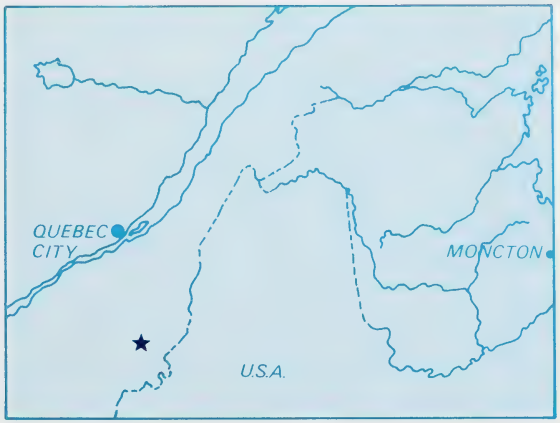
CLASSIFICATION:
Iron. Medium octahedrite

□ □

CIRCUMSTANCES:
The meteorite was plowed up on the farm of Ollie Hallor from a depth of 20 to 30 cm.

CURRENT HOUSING:
Unrecorded

★ LEEDS



LOCATION OF FIND:
Unknown, but possibly near Leeds, Quebec

DATE:
Recognized - 1931

DESCRIPTION:
A single mass of 1.5 kg

CLASSIFICATION:
Iron. Coarse octahedrite

CIRCUMSTANCES:
Very little is known about this meteorite. It was recognized by H. H. Nininger, one of the world's most devoted meteorite collectors and researchers, in 1931 amidst a group of magnetite samples labelled "magnetite from Leeds, Quebec". Exactly where it

was found, and whether it was brought up from below the surface, was not recorded. Nininger kept the main mass in his own collection.

CURRENT HOUSING:
The main mass is now in the meteorite collection of Arizona State University in Tempe, Arizona. Most of Nininger's famous collection is now there. One small fragment is in the Canadian Meteorite Collection.

★ MADOC

LOCATION OF FIND:
Madoc Township, Ontario

DATE:
Found - autumn, 1854

DESCRIPTION:
One stone weighing 167.5 kg

CLASSIFICATION:
Iron. Fine octahedrite

CIRCUMSTANCES:
This meteorite, found as it was when meteorite specimens were quite rare, was widely studied and written about. The type of iron in Madoc was unusual enough at the time to cause one scientist to suggest that it be classified as "madocite."

CURRENT HOUSING:
The main mass is in the Canadian Meteorite Collection.

★ MANITOUWABING

LOCATION OF FIND:
Near Manitouwabing, Parry Sound District, Ontario

DATE:
Fell - possibly October 14, 1949
Found - November, 1962

DESCRIPTION:
Pyramidal shaped - 30 cm high on a base 16 x 23 cm - weighing about 39 kg

CLASSIFICATION:
Iron. Coarse octahedrite

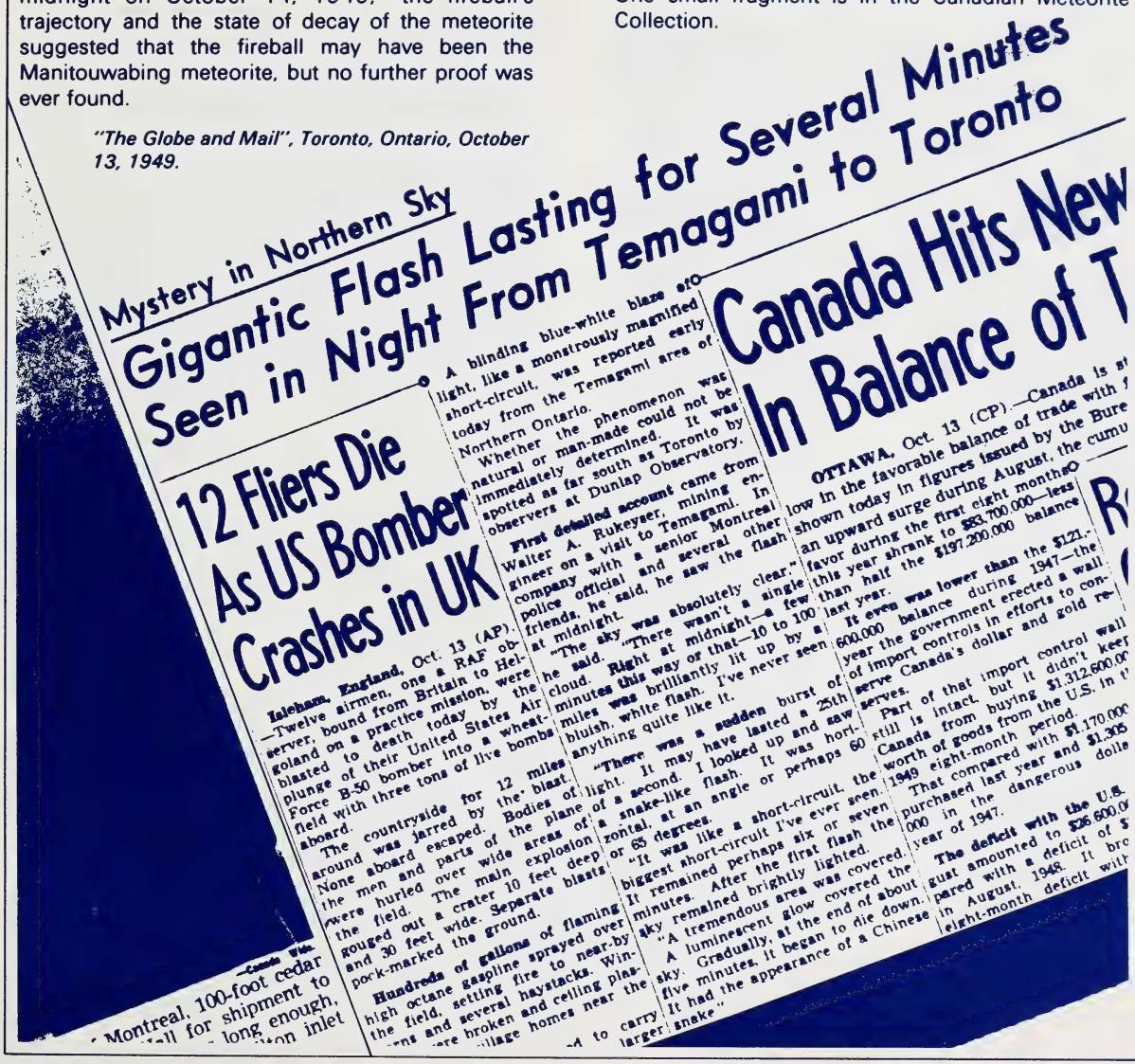
CIRCUMSTANCES:
The meteorite was found in November of 1962, but news of the find did not appear until early 1964. A

bright fireball had been reported in the area after midnight on October 14, 1949; the fireball's trajectory and the state of decay of the meteorite suggested that the fireball may have been the Manitouwabing meteorite, but no further proof was ever found.

"The Globe and Mail", Toronto, Ontario, October 13, 1949.

CURRENT HOUSING:

One small fragment is in the Canadian Meteorite Collection.



Mystery in Northern Sky

Gigantic Flash Lasting for Several Minutes Seen in Night From Temagami to Toronto

12 Fliers Die As US Bomber Crashes in UK

Canada Hits New In Balance of T

Montreal, 100-foot cedar

MAYERTHORPE

LOCATION OF FIND:
Near Mayerthorpe, Alberta

DATE:
Found - September 1964

DESCRIPTION:
Two masses - 8.7 kg and 3.9 kg

CLASSIFICATION:
Iron. Coarse octahedrite

CIRCUMSTANCES:
The first specimen, the larger one, was found by Mr. M. Dmitroca while he was cultivating a field in 1964. A search for additional stones was initiated as a result of this find and the smaller stone was discovered. Apparently, it had originally been found in 1946 at which time it had been cut, seen to be metal, and subsequently disposed of in a rock pile. No other information on this original find is recorded.

CURRENT HOUSING:
The larger mass is at the University of Alberta in Edmonton; the smaller one is in the Canadian Meteorite Collection.

MIDLAND

LOCATION OF FIND:
The shore of Midland Bay near Midland, Ontario

DATE:
Found - 1960
Recognized - 1964

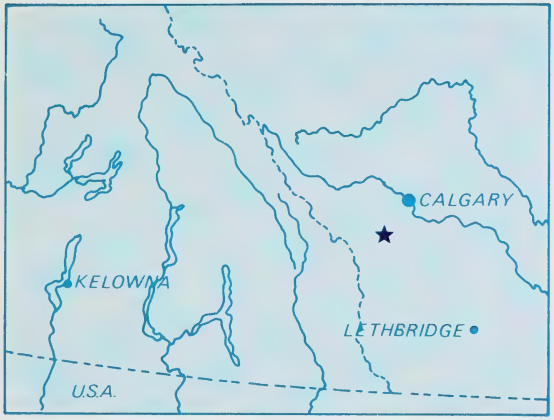
DESCRIPTION:
One small mass of 34 g

CLASSIFICATION:
Iron. Octahedrite

CIRCUMSTANCES:
The meteorite was found on the shore of Midland Bay and sent by the finder to the Geological Survey of Canada for identification.

CURRENT HOUSING:
The iron, in two specimens, is in the Canadian Meteorite Collection.

★ MILLARVILLE



LOCATION OF FIND:
Near Millarville, Alberta

DATE:
Found - April 28, 1977, 8:30 pm

DESCRIPTION:
One mass of 15.64 kg

CLASSIFICATION:
Iron. Ataxite

CIRCUMSTANCES:
The meteorite was found by Mr. C. E. Hayward while plowing a newly-cleared field.

CURRENT HOUSING:
One small piece of the meteorite (45.4 g) is in the Canadian Meteorite Collection. The main mass is in the University of Calgary, Calgary, Alberta.

★ OSSEO

LOCATION OF FIND:
5 km from the village of Osseo, Temiskaming District, Ontario

DATE:
Found - June, 1931

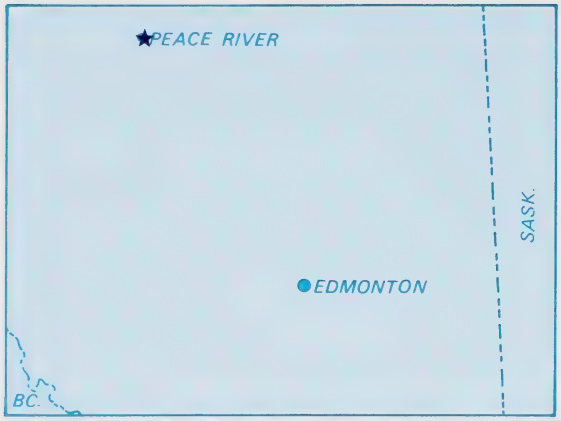
DESCRIPTION:
An oblong mass about 30 cm long, weighing 46.3 kg

CLASSIFICATION:
Iron. Coarse octahedrite

CIRCUMSTANCES:
The meteorite was sent intact to the United States National Museum in Washington by Mr. Frank Johnston. Mr. Johnston reported that the meteorite had been found on a flat, rocky knoll on which no marks of impact could be seen, and that no sightings of the fall had been reported.

CURRENT HOUSING:
The main mass remains in Washington. One slice (2 kg) is in the Canadian Meteorite Collection.

★ PEACE RIVER



LOCATION OF FIND:
45 km west of Peace River, Alberta

DATE:
Fell - March 31, 1963, 4:35 am
Found - April 24, 1963 (first stone)

DESCRIPTION:
Seven pieces weighing from 0.36 kg to 16.6 kg and totalling 45.76 kg

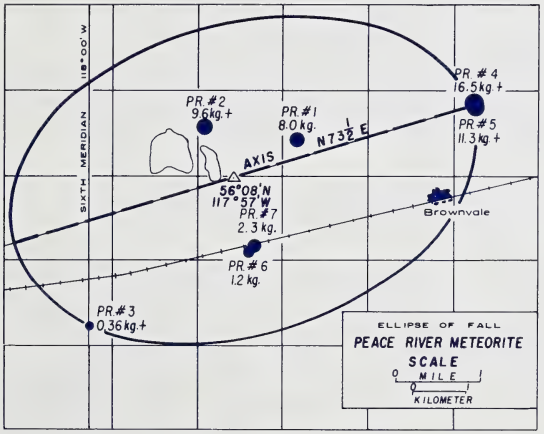
CLASSIFICATION:
Stone. Olivine hypersthene chondrite

CIRCUMSTANCES:
An exceptionally bright fireball and accompanying explosions were reported by residents of the Peace River district of northwestern Alberta during the early morning of March 31, 1963. Representatives of the

One of the PEACE RIVER METEORITE *specimens held by Dr. R. E. Folinsbee on the day of the recovery.* □

University of Alberta in Edmonton, 500 km to the southeast, conducted extensive interviews with witnesses and, from the data collected, plotted an expected area of fall for the fragments of the explosion. After systematic searching of the area, seven stones were found.

CURRENT HOUSING:
The meteorite is distributed. Both the University of Alberta in Edmonton and the Canadian Meteorite Collection have significant masses.



(Courtesy of Dr. R. E. Folinsbee)

★ RED DEER HILL

LOCATION OF FIND:
7 km north of Red Deer Hill, Saskatchewan

DATE:
Found - May, 1975

DESCRIPTION:
Two stones - 1.06 kg and 1.45 kg

CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:
The smaller piece was found by Mr. J. Hrynuik during seeding in the spring of 1975. The second stone was found during an organized search of the area two weeks later; it was 0.08 km north of the first. The two stones are almost identical in composition but do not fit together. They are considered to be parts of the same meteorite, nonetheless. There is some suggestion that the BLAINE LAKE meteorite may also be from the same fall.

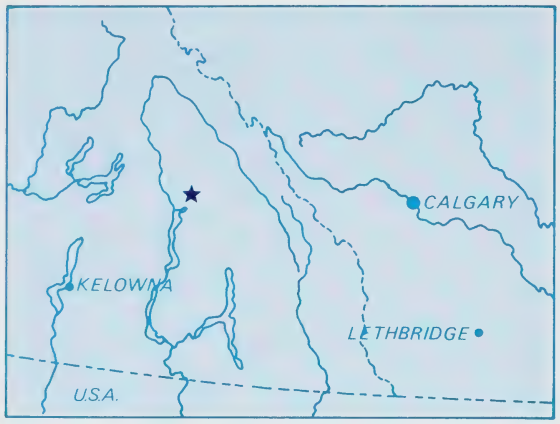
CURRENT HOUSING:
Two small fragments are in the Canadian Meteorite Collection.

★ REVELSTOKE

LOCATION OF FIND:
64 km northwest of Revelstoke, British Columbia

DATE:
Fell - March 31, 1965, 9:47 pm
Found - mid-April, 1965

DESCRIPTION:
Several very small fragments totalling only about 1 g



CLASSIFICATION:
Stone. Carbonaceous chondrite

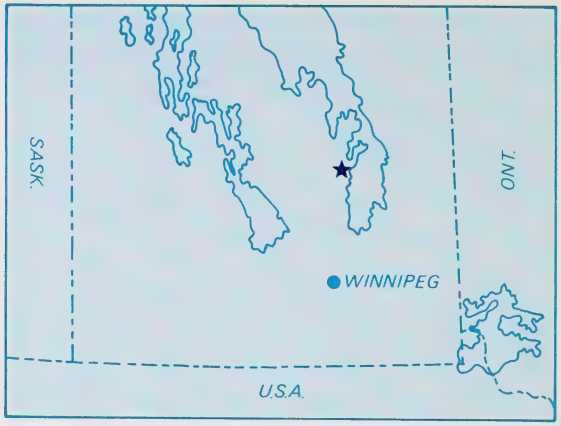
CIRCUMSTANCES:
Thousands of people in British Columbia and Alberta witnessed a spectacular fireball in the clear night sky of March 31, 1965. Scientists compiled reports of all the sightings, including the sighting by an Air Canada pilot flying west at 5000 metres over southern Saskatchewan, and concluded that the fall must have occurred north of Revelstoke, in the rugged Monashee Mountains.

Initial searches yielded no meteorites. In mid-April, however, Elmer Coats and Alfred Daniels, previously alerted by scientists to the possibility of meteorite finds, were snow-shoeing through a remote area in the process of trapping beaver, when they noticed some tiny black fragments embedded in ice. These turned out to be the entire find.

Carbonaceous chondrites are extremely fragile and perishable. Most of the meteorite probably turned to dust as it exploded in the atmosphere.

CURRENT HOUSING:
Some small fragments (0.2 g) are in the Canadian Meteorite Collection.

★ RIVERTON



LOCATION OF FIND:
7 km south of Riverton, Manitoba

DATE:
Found - 1960 or 1961
Recognized - 1968

DESCRIPTION:
The stone was found whole but is now in three pieces - 76.2 kg, 24.8 kg and 2.3 kg.

CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:
One stone was picked up in a pasture, but by the time it was recognized as meteoritic by a representative of the American Meteorite Laboratory in Denver, Colorado, it was in three stones.

CURRENT HOUSING:
The 24.8 kg piece is in the Canadian Meteorite Collection.

SHELBURNE

LOCATION OF FIND:
Near the village of Shelburne, Ontario

DATE:
Fell - August 13, 1904

DESCRIPTION:
Two irregularly-shaped stones of 12.6 kg and 6.0 kg

CLASSIFICATION:
Stone. Olivine hypersthene chondrite

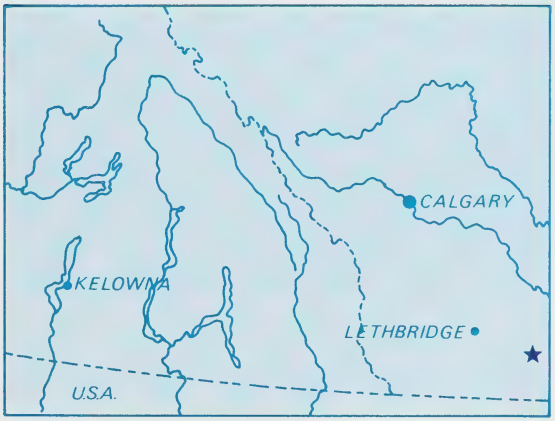
CIRCUMSTANCES:
The brilliance of the fireball accompanying this meteorite's fall, together with the fact that it passed over cottage country on a summer evening, made for hundreds of witnesses to the fall. Visual reports of the fireball were reported more than 130 km from the point of fall, while sounds were reported over an area of 50 km radius. In the immediate area of the fall, the entire northern sky was reported to be illuminated bright red.

CURRENT HOUSING:
The meteorite is distributed. Three small fragments are in the Canadian Meteorite Collection.

Mr. J. Shields and his family were in their house on the evening of August 13th and were alarmed by a loud thump which shook the house. Early the following morning the explanation to this phenomenon was found as they observed that a meteoric stone, weighing 13 lbs., had fallen on his premises not more than two feet from the house. The stone had struck with such force that it penetrated nearly two feet into the ground. Mr. Shields states that the meteorite cannot have been hot when it struck, since it carried with it into the earth a large burdock leaf, which, after he had dug it up, was still green and quite uncharred.

L. H. Borgstrom, "The Shelburne Meteorite", Transactions: Royal Astronomical Society of Canada, 1904, p.69.

SKIFF



LOCATION OF FIND:
Near Skiff, Alberta

DATE:
Found - 1966

DESCRIPTION:
One stone of 3.54 g

CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:
The meteorite was found by Mr. W. L. Nemeth on his farm near Skiff.

CURRENT HOUSING:
Specimens are in the Canadian Meteorite Collection and at the University of Alberta in Edmonton.

★ SKOOKUM

LOCATION OF FIND:
Skookum Gulch, near Dawson City, Yukon Territory

DATE:
Found - January 21, 1905

DESCRIPTION:
An irregular flat block about 29 x 23 cm, from 3 to 8 cm thick and weighing 15.88 kg

CLASSIFICATION:
Iron. Nickel-rich ataxite

CIRCUMSTANCES:
Like GAY GULCH, it was discovered during gold mining. It was brought to the surface in gravel which was deposited in Pliocene times (2 to 5 million years ago), so the meteorite's fall could be just as old.

The GAY GULCH meteorite, found 16 km to the south a few years earlier, is chemically almost identical to this meteorite and thought to be a part of it. Some references combine the two under the name 'Klondike'.

CURRENT HOUSING:
The main mass is in the Canadian Meteorite Collection.

★ SPRINGWATER

LOCATION OF FIND:
A field near Springwater, Saskatchewan

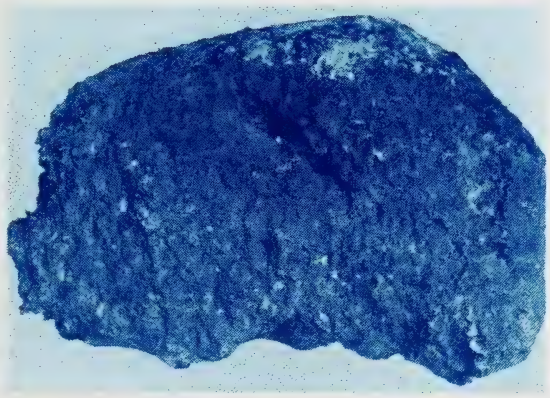
DATE:
Recognized - summer, 1931

DESCRIPTION:
Three separate masses - 38.6 kg, 18.6 kg, 10.5 kg

CLASSIFICATION:
Stony-iron. Pallasite

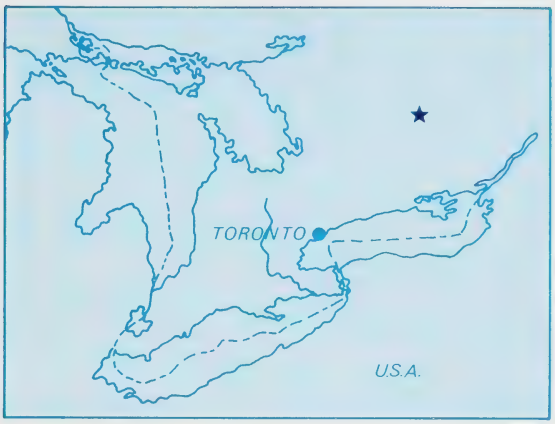
CIRCUMSTANCES:
One of the stones was sent by the finder directly to the Nininger Laboratory in Denver, Colorado where it was verified as being meteoritic (see BRUNO meteorite). Nothing was ever recorded concerning the date of the find or fall. It was the first pallasite to be found in Canada.

CURRENT HOUSING:
The meteorite is widely distributed. One slice (744.6 g) is in the Canadian Meteorite Collection.



SPRINGWATER METEORITE, *H. H. Nininger, "The Springwater Meteorite", American Mineralogist, Vol. 17, p. 396, Fig. 1*

THURLOW



LOCATION OF FIND:
Thurlow Township, Hastings County, Ontario

DATE:
Found - May 12, 1888

DESCRIPTION:
An irregular, pyramidal shape with a base about 16 cm by 13.5 cm, a height of 10 cm, and a weight of 5.42 kg

CLASSIFICATION:
Iron. Fine octahedrite

CIRCUMSTANCES:
The meteorite was found by Mr. E.S. Leslie, Jr. It was apparently brought to the surface by plowing. The date of the fall is not known.

CURRENT HOUSING:
Specimens are distributed, but the main mass is in the Canadian Meteorite Collection.

★ VILNA

LOCATION OF FIND:
15 km northeast of Vilna, Alberta

DATE:
Fell - February 5, 1967, 6:55 pm
Found - February 9, 1967 (first fragment)

DESCRIPTION:
Two very small fragments - 48 mg and 94 mg

CLASSIFICATION:
Stone. Olivine hypersthene chondrite

CIRCUMSTANCES:
The Vilna meteorite could well be the most precisely observed meteorite ever to fall on the earth. Its fall was observed by thousands of people and photographed by a special all-sky camera at the Dominion Observatory in Meanock, Alberta. All of the data allowed for the expected point of fall to be quite accurately plotted, but even at that there must have been some luck involved for two such tiny fragments to be discovered in the snow.

There were those who believed that the bright flash in the sky was not a meteor but an extra-terrestrial craft, on its way to land at St. Paul, Alberta. The world's only known UFO landing site had just been built there as that community's "Centennial Project".

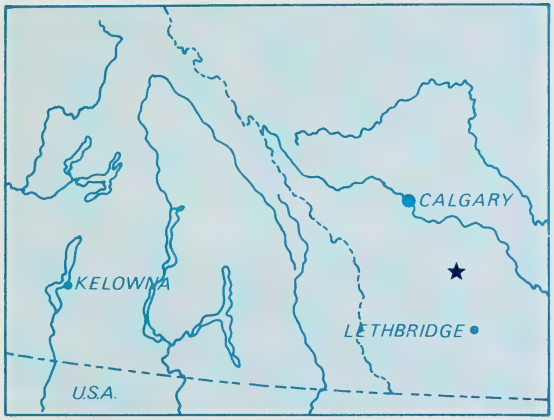
CURRENT HOUSING:
Both fragments are at the University of Alberta in Edmonton.

At about 7:15 p.m. February 5, 1967, 2 or 3 miles west of Entwistle, driving east on Highway 16 at 50 m.p.h., I saw a light in the sky to the north-east which reminded me of summer lightning. I quickly realized that it could hardly be lightning and that we were too far away to see the lights of Edmonton, and said to my wife, who was driving, "What's that?". We both saw a greenish glow, and as we watched, a bright green ball appeared about 45 degrees above the horizon and to our left. It appeared to be moving east and following a steeply descending trajectory. I estimate the angle of descent at about 35°. We both thought that its light might be pulsating somewhat. It descended to about 20 degrees above the horizon and disappeared. Except for its colour, we might have thought that it was a large meteorite, very near to us.

John Lauber, quoted in "Vilna Meteorite - Camera, Visual, Seismic and Analytic Records", R. E. Folinsbee, L. A. Bayrock, G. C. Cumming and D. G. W. Smith, Journal of the R.A.S.C., Vol. 63, No. 2, p. 67.

□ □

VULCAN



LOCATION OF FIND:
Near Vulcan, Alberta

DATE:
Found - April, 1962

DESCRIPTION:
One stone of 19 kg

CLASSIFICATION:
Stone. Olivine bronzite chondrite

CIRCUMSTANCES:
The meteorite was found by Mr. N. Budd in about 30 cm of soil. The fusion crust formed by the heat of friction with the atmosphere was still intact, indicating that it was a fairly recent fall.

CURRENT HOUSING:
The main mass is at the University of Alberta in Edmonton. Several specimens are also in the Canadian Meteorite Collection.

WELLAND

LOCATION OF FIND:
A field 2 km north of Welland, Ontario

DATE:
Found - April 30, 1888

DESCRIPTION:
An extremely weathered, kidney-shaped mass of 8 kg with greatest dimensions of 15 x 20 cm

CLASSIFICATION:
Iron. Medium octahedrite

CIRCUMSTANCES:
The meteorite was plowed up by a Mr. Walton Caughell and attracted his attention because of its weight. A small piece was broken off, but the main mass was discarded. The piece which was kept eventually came into the hands of the family physician who, convinced it was meteoritic, forwarded it to a meteorite expert for analysis. When it was found to be meteoritic, the main mass was again sought out; it was found in a pile of scrap iron inside an old stove.

CURRENT HOUSING:
The main mass is in the Vienna Museum; two small specimens are in the Canadian Meteorite Collection.

★ WYNYARD

LOCATION OF FIND:
A field 14.5 km north of Wynyard, Saskatchewan

DATE:
Found - spring, 1967 or 1968
Recognized - January 1982

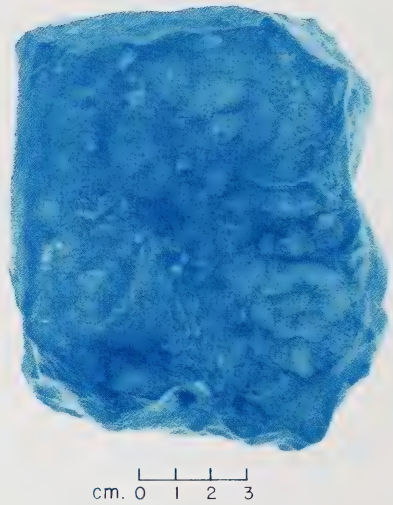
DESCRIPTION:
One stone of 3479.8 g - about 14 x 12 x 9 cm

CLASSIFICATION:
Stone. Olivine pyroxene chondrite

CIRCUMSTANCES:
The meteorite was plowed up by Mr. Arni Hall. It was recovered and identified by Professors Mel Stauffer and Don Gendzwill of the Department of Geology at the University of Saskatchewan in Saskatoon, January 31, 1982.

A large meteorite had been observed falling and splashing violently into nearby Quill Lake on July 24, 1922. A connection between this fall and the recently identified Wynyard meteorite is possible.

CURRENT HOUSING:
Most of the mass is in the Canadian Meteorite Collection but a small piece is under study at the University of Saskatchewan in Saskatoon.



WYNYARD METEORITE, *photo courtesy of Dr. Mel W. Stauffer, University of Saskatchewan, Saskatoon, Saskatchewan*

Edmonton Journal
"ONE OF CANADA'S GREAT NEWSPAPERS"
EDMONTON, ALBERTA, MONDAY, MARCH 10, 1924
SINGLE COPY, 5 CENTS

LBERTA ROCKED BY METEOR BLAST

lying Saw-Blade Kills Two St. Paul Area Men

d Man Injured s Whirling Blade orn From Mountings

Log Breaks Saw, Terribly Muti-lated

RUSHING WORK

ollows "Boomer-urse With Deadly Speed

(Special to the Journal by Staff Reporter)

L. Alta., March 10.—ly by the flying blade of ir, torn from its mount-struck a snag in a log holding, Nick Dragaka, Kirkosh, 23, were kill-at the Dragaka farm, th of here, Saturday. 2 George Dragaka, 23, was

man were operating a th a blade approxi-feet in diameter and th an automobile motor ng failing and the men ng to complete their

Logs On Table

ere placed on the "rocker table, with the elder ding one end of the th the other. Young e operating the table, ant directly in front of

the blade struck a snag e logs and a tooth was ew from the sawmill. shoulder of the younger rebounding in a wide Kirkosh, severing his th, body.

d and Continued Its ...ravaging work after ...r" a fourteen-inch ...e the injured man's ...ch Dragaka. And ...ed through with ...mendity.

Leaves Families

the men killed were ...ragaka leaves a widow ...ren, while the Kir-y and one child. George ...e brother of the dead

...men were investigated Dr. J. P. Canning and ...ctables Peace and ...ed a verdict in each ...ecessary. Funeral ar-...have not been com-

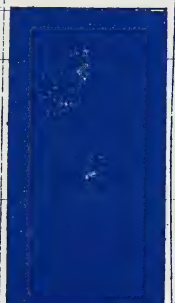
...r drove the injured ...pital, whose his ...ases of Dr. J. Coale.

...Girl; Kills Self

...y Wounds Sweetheart ...ther Also

...BROOKFIELD, ...Nova Scotia, (By Will-...r Sweetheart, Adelle ...with a knife Monday, ...by her sister, Al-...d then committed sui-...bread first into a well ...ashley farm.

Gets Treasury Post



Prof. Joseph Viner, University of Chicago economist, has been appointed as a special assistant to Secretary Margenthau of the U. S. treasury department.

Raps Evidence Of Psychiatrist

Testimony of University Experts "Ridiculous" Says Smith

ENDS ARGUMENT

Unless the $50,000 damages award ordered by Mr. Justice Ives in favor of Armand Fevriet, alleged hazing victim, is "shocking to the conscience of a reasonable man," the appeal court must not disturb it, argued A. L. Smith, K.C., counsel for the boy, as he continued his argument before the appellate division of the supreme court Monday.

Mr. Smith quoted an old principle of law in bringing forward this contention during his argument in support of the award against the University of Alberta, the board of governors and the university senate should be upheld.

Mr. Smith concluded his argument at the noon adjournment and he was followed at the afternoon session by his junior, Ronald Maitland, who proposed to argue the

(Continued on Page 6, Col. 4)

"State Medicine" Bill Introduced

Provides Modified Service

Nearly Bakes To Death

Police Save Man Just in Nick of Time

NEW YORK, March 10.—Take it from William Pickup, a baker's oven stays hot a long time.

He became project in the subject of an oven while doing repair work Sunday and if police hadn't torn away the door in quick time, Pickup probably would have been baked to death. As it was, he spent an agonizing 45 minutes and is now suffering from severe burns on his back. Hospital physicians said, however, he will recover.

Say Conradson 'Flashed' Bills

Two $10 Bank Notes in Accused's Possession Are Discussed

WAS CARRYING $88

(Special to the Journal by Staff Reporter)

WETASKIWIN, March 10.—Alleged "flashing" of money at Edson on November 24, by Hyvarar Conradson, was described in criminal court here Monday as the trial of Conradson, on a charge of slaying Carl Anderson, Buck Creek storekeeper on November 16 last, continued before Mr. Justice Ford and jury.

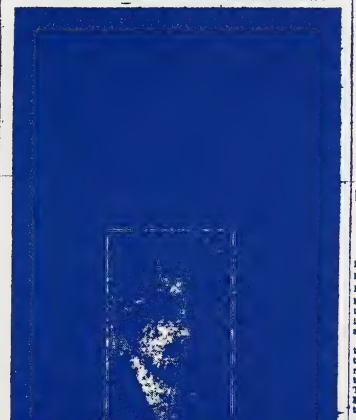
Eighty-eight dollars in bills taken from the accused at the time of his arrest at Edson were placed in the records as exhibits. The bills include two $10 bill, by which the crown hopes to prove that Conradson had money in ... passed into the hands of Anderson shortly before his death. These bills are Bank of Montreal issues, numbers 018682 A and 018687-A.

Tell of $88 Bill

Velio Adsick, Edson barman, head of the accused giving him change for $20, and there has been evidence that the accused presented a $20 bill in payment for his room at Edson. Nancy Kelly, Edson waitress, testified that Conradson offered to give her $10 and Don C. Underwood, Edson hotel proprietor, said that he was given $10 in payment for a game which the accused played. Change was given Conradson, according to the testimony, had lunch four times on the evening of November 24. He first had supper at the Edson hotel, spending a $5 bill and getting change

(Continued on Page 6, Col. 6)

THREE POWERS IN AGREEMENT



While the world awaited the result of their conference in Rome, Julius Goemboes, left, premier of Hungary, Premier Mussolini of Italy, right, and Chancellor Dollfuss of Austria, inset, pledged their countries an alliee to one another when they signed three commercive pacts in Rome Saturday. The pacts were drawn to create peace in trouble-torn Europe.

Six Taxed On $30,000 Up Farmers Pay But $2,645

Six Albertans paid provincial income tax assessments of $30,000 or more for 1931, according to a summary given the legislature Monday at the request of J. R. Love, (U.F.A., Wainwright).

The incomes of the six aggregated $313,626 and the tax levied was $55,372, or about one-fifth of the total yield in that year when the levy went into effect.

Information concerning the 1932 income tax assessments will not be available until May, 1934, says the return.

In 1931, however, there were 34,571 taxpayers upon whom a tax of $538,133 was levied. The gross income involved was $61,830,371 before allowing for statutory exemptions.

In view of the government's announcement that the 66 mills tax or filling tax will be eliminated this year and the rate on the higher levels stepped up, there is special interest as to where this proposed increase will be applied.

It is rumored that the increase will take effect upon incomes in excess of $3,000. No information, however, has yet come from the government quarter, beyond the statement that the changes would be made known before the amending bill is introduced.

In 1931 the return shows, there

(Continued on Page 6, Col 8)

People Terrified as Glare Lights Alberta, Montana, Saskatchewan; Buildings Shake; Meteor Untraced

Residents Hear Crash of Fallen Star for Miles Around

"LIKE LIGHTNING"

Farmers Searching for Remains of Meteorite, Traces of Fall

Startling thousands of people as it lighted up an area from Saskatchewan to Brandt and from Montana to Edson, in ghostly brilliance, and shaking houses with the air blast of its passage a flaming meteor thundered across Alberta skies Sunday at 8:30 p.m.

In dozens of districts, people sure that the meteor had fallen near their homes were searching for its remains, but as far only one clue as to its final fate has been obtained. This clue was in the statement of a Bassano resident that it had disintegrated in the air above his head.

From widely separated points came accounts widely different. Some said there had been not one but three meteors. Some said that it was traveling north, others south and still others, these in the majority, that it followed a westerly path.

Fearful Near Fortiesnak

At all events, it appeared that the meteor had passed close to the Fortiesnak area, 60 miles southeast of Edmonton, for there houses were shaken, windows and dishes rattled following the flash of the meteor's passage.

Then the heavy rumbling sound heard by people in Mirror, Bashaw, Fortiesnak and Ponoka came from the air blast. Another clue, an expalanet of the meteor, was indicated by the fact that all stories, no matter where they might differ, did assert that the noise, a heavy rumble, came about two minutes after the meteor had passed.

Expert Explains

Experts stated that a meteor, sufficiently large to light up an area such as that described, and travelling at a height of anywhere up to 86 miles above the earth's surface would cause sufficient air blast to shake houses.

Dr. J. W. Campbell, of the University of Alberta, appealed Monday to people who had seen the actual meteor to write to him, giving their location and describing the location

(Continued on Page 6, Col. 1)

What Are Meteors?

Expert Explains Source of Strange "Visitors" to Planet

What are meteors?

This question, raised by the appearance of a meteor over Fortiesnak Alberta, and lighting up two provinces and one state Sunday night, was asked of Dr. J. W. Campbell, mathematician, expert of the University of Alberta. Monday. Here are his answers to this and other allied questions:

What are meteorites?

Meteorites are bodies shooting through space at high speed and when they enter the earth's atmosphere, being heated by friction with air, until they glow. It should be remembered that there is a difference between meteors and meteorites. Meteorites are large metallic or rocky fragments thought to have been part of some planet. Flying through space at a terrific speed, they ignite when entering the earth's atmosphere 100 miles above the surface, are not consumed and reach the surface of the earth?

* * *

What are meteors?

Meteors on the other hand are small—so-called shooting stars—smaller than marbles, and are burned up before reaching the earth. Sometimes they are associated with comets that have died out.

* * *

Where do meteorites start?

They are drifting through space and happen to meet the earth. They probably follow orbits around the sun like other planets. To ask how far they travel is like asking how far the moon travels?"

* * *

What is their origin?

This is the same nature of question as that of the origin of planets. The suggestion has been made that the meteorites of iron possibly result from the breaking up of a large planet and that the fragments become meteorites.

* * *

What of size?

The largest known meteorite fell in Southwest Africa. It was of nickel and iron and weighed between 50 and 70 tons. One was found in Greenland by Peary the explorer in 1896 that weighed 36 1-2 tons. One fell in Mexico that weighed 27 tons.

A huge meteorite fell in Siberia, on June 30, 1908. The roar of it was heard for 400 miles. Although it fell some 50 miles from any settlement it did considerable damage. A herd of reindeer was killed and the damage by heat withered timber for a considerable distance. Hot waves were felt at the nearest settlement which shook houses.

Last fall the fall of a large meteorite in the Peace River country was reported from Beaverlodge. It still is undiscovered.

Allege Youth

Journal Reporter Tells of Seeing Light From Giant Meteor

SAW THREE FLASHES

"Could Drive Car by Light" Declares City Lawyer

By Gordon McCallum

(Special to the Journal by Staff Reporter)

WETASKIWIN, May 10.—Party of Edmontonians driving from the city to attend the Conradson murder trial here, Sunday night had "ringside seats" for the spectacular meteor display.

In one automobile Abe W. Millar and R. F. Jackson, and the writer were about eight miles south of Edmonton, when the sky behind us remained alive with light for five or six seconds and then darkness returned, seeming more intense than before the glare. The flashing light appeared in the form of a "heap" on the southern horizon.

Darts To Ground

The end of the phenomenon was not unlike forked lightning as it there appeared to be two or three blinding darts from the clouds into the ground. As the car rolled along the roadway the whole countryside seemed to take on a deepened hue. It was like the coming of dawn in rapid-fire style.

From the east horizon to the west and far to the south the skies brightened up. It was raining and the light came from above the clouds. There was no particular line of light. It was simply a general brightness of the skies.

Mr. Millar, who was driving instinctively took to the side of the road and started to peer about to see what was causing the light. The passengers did likewise but as the final phase of the incident occurred, Mr. Millar and Mr. Jackson were looking to the rear behind the car.

The intensity of the light is easily described by Mr. Millar in this way.

The car could have been driven along the road by its light, it certainly was bright enough."

A few miles further on in Calder car was J. J. Frawley, K.C. of the attorney-general's department who later described the occurrence as a great light in the skies.

Three Light "Flashes"

Dr. R. A. Oberd, Portland, Ore., sitting at the window of a Wetaskiwin hotel, said that there were three waves of light. First, he said, the sky seemed to brighten up and then as that light faded, it brightened up again. This time more intensely, then at the end of that there was another and a shorter glow. He placed the time from the start of the first to the finish of the last as perhaps 30 seconds.

The brightening of the sky also was noted by passengers on a C. P. R. train which was around the Ponoka area when it occurred. The

THE LIFE OF OUR LORD

By

CHARLES DICKENS

Written for His Children in 1849, And Kept as a Precious Family Secret for 85 Years

CHAPTER THE ELEVENTH

Part Two

whom they had been afraid, and had been down, but who had told them that the Lord was risen; and also, that, as they came

N.L.C. - B.N.C.
3 3286 05593414 1

N METEORITES ★ A catalogue of meteorites found in Canada

CANADIAN METEORITES ★ A catalogue of meteorites found in Canada

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